

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

November 14, 2003

TO: Internal File

FROM: James D. Smith, Environmental Scientist and Team Lead

RE: 2003 Midterm Review, PacifiCorp, Deer Creek Mine, C/015/0018, Task ID #1694

SUMMARY:

In accordance with R645-303-211, the Division is required to review each active permit during its term, not later than the middle of the permit term (August 07, 2003 for the Deer Creek Mine) and is to cover pertinent elements that have been selected for review. Items chosen for the midterm review for the Deer Creek Mine include:

1. An AVS check to ensure that Ownership and Control information is current and correct.
2. A review to ensure that the Plan has been updated to reflect changes in the Utah Coal Regulatory Program, which have occurred subsequent to permit approval (One area of emphasis is to ensure compliance with the U. S. Fish and Wildlife Windy Gap Process).
3. A review of the plan to ensure that the requirements of all permit conditions, division orders, notice of violation abatement plans, and permittee initiated plan changes are appropriately incorporated into the plan document.
4. A review of the applicable portions of the permit to ensure that the plan contains commitments for application of the best technology currently available (BTCA) to prevent additional contributions of suspended solids to stream flows outside of the permit area.
5. A review of the bond to ensure that it is in order and that the cost estimate is accurate and is escalated to the appropriate year dollars.

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This TA addresses the mid-term review hydrology requirements, which are to ensure that the plan contains commitments for application of the BTCA to prevent additional contributions of suspended solids to stream flows outside the permit area.

The Division notified the Permittee of the mid-term review for the Deer Creek Mine in a letter to Energy West Mining Company dated September 16, 2003. Mid-term reviews can include a technical site visit, in conjunction with the assigned compliance inspector, to document the status and effectiveness of operational, reclamation, and contemporaneous reclamation practices.

The Deer Creek Mine permit covers the portal area in Deer Creek Canyon and the Deer Creek Waste Rock Storage Facility in Huntington Canyon, near the Huntington Power Plant cooling pond. It includes fan portals and access road in Rilda Canyon and two fan portals in Meetinghouse Canyon.

The Deer Creek Mine permit was renewed 02/07/01 and the latest revision is dated June 24, 2003. Three special conditions are attached to the Permit:

1. If during entry development, sustained quantities of groundwater are encountered which are greater than 5 gpm from a single source in an individual entry, and which continue after operational activities progress beyond the area of groundwater production, PacifiCorp must monitor these flows for quality and quantity under the approved baseline parameters. PacifiCorp will notify the Division within 24 hours prior to initiation of monitoring.
2. This special condition is for normal working circumstances and does not apply in an emergency situation: Vehicle access will not be allowed in Rilda Canyon from December 1 to April 15 for construction, maintenance and/or repair of the Rilda Canyon Surface Facilities without prior written approval from the Division. Access will be allowed to the Rilda Canyon Surface Facilities through the Deer Creek Mine portals.
3. PacifiCorp will submit water quality data for the Deer Creek Mine beginning with data for the second quarter of 2001 in an electronic format through the Electronic Data Input web site, <http://linux1.ogm.utah.gov/cgi-bin/appx-ogm.cgi>.

The Permittee is monitoring several in-mine flows and has not recently notified the Division of any new inflows that meet the criteria of Condition 1. The Permittee is meeting the requirements of Conditions 2 and 3.

TECHNICAL ANALYSIS:

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

General

Underground mining and reclamation activities at the Deer Creek Mine are conducted so as to minimize disturbance of the hydrologic balance within the permit and adjacent areas, to prevent material damage to the hydrologic balance outside the permit area, and to support approved postmining land uses in accordance with the terms and conditions of the approved permit and the performance standards of this part. Additional contributions of suspended solids and sediment to streamflow or runoff outside the permit area are prevented to the extent possible using the BTCA.

Sediment Control Measures

Sediment control at the main Deer Creek Mine yard in Deer Creek and Elk Canyons consists of an undisturbed drainage bypass system, ditches for disturbed area drainage, and a sedimentation pond. Methods that are used to control sediment at the several ASCAs include silt fences, berms, straw bales, and sediment traps. (Methods listed in the MRP but not currently used are gravel-filter dikes, check dams, catch basins, and mulches.) There are ten ASCAs, totaling 16.48 acres, 14.15 acres for the conveyors and sedimentation pond.

At the Deer Creek Waste Rock Storage Facility there are diversions, silt fencing, a sedimentation pond, and a berm of topsoil around the Phase I waste pile. There are two ASCAs, covering a total of 2.41 acres. One ASCA is the outslope of the topsoil berm around the waste pile; the other is along the sides of the access road. Silt fence and revegetation provide sediment control. A BTCA area at the east end of the waste pile utilizes silt fencing as the sediment control measure: this will be superseded by a sedimentation pond if Phase II of the waste storage facility is ever built.

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At the Rilda Canyon Surface Facilities, the topsoil pile has been revegetated and silt fence has been placed along the entire length of the toe of the pile. Along the access road, silt fence and straw bales provide sediment control for two BTCA areas (2.01 acres) and ditches and culverts provide additional drainage and sediment control. The pad was built from imported fill that is retained by a Hilficker type wall system. All precipitation on the 1.02 acre gravel surface of the pad is captured and directed into the mine through the portals.

Berms control sediment at the two small ASCAs at the fan-portal breakouts in Meetinghouse Canyon. Drainage from these disturbed areas is into the mine.

Siltation Structures: General

Siltation structures at the main Deer Creek Mine yard in Deer Creek and Elk Canyons and at the Deer Creek Waste Rock Storage Facility consist of the two sedimentation ponds. Additional contributions of suspended solids and sediment to streamflow or runoff outside the permit area are prevented to the extent possible using the BTCA. Construction and design of the sedimentation ponds was under the direction of a registered professional engineer. The sedimentation ponds are inspected quarterly by a registered professional engineer.

Siltation Structures: Sedimentation Ponds

The Deer Creek Canyon pond is located at the lower end of the pad area and adjacent to the main access road. The pond is located in the old streambed, streamflow from undisturbed areas upstream bypassing the disturbed area through a large culvert. An earthen embankment retains the water, and the east side of the pond was enlarged by excavation into the canyon wall.

The pond in Deer Creek Canyon is designed for total containment of a 10-year, 24-hour event. There is a "sediment retention box" on the west bank of the Deer Creek Mine pond. Sediment trapped by this box is removed several times a year. This sediment trap reduces short-circuiting and extends the time between cleaning the entire pond to 5 to 8 years.

The pond in Deer Creek Canyon discharges through a vertical CMP primary spillway; a manual slide-gate valve controls the retention time and the rate of discharge. A grouted riprap emergency spillway provides controlled release for a 100-year, 24-hour event. Riprap protects the outlet of both spillways.

The Waste Rock Storage Facility pond is located in a small, ephemeral drainage at the west end of the waste pile. It is also a combination incised and embankment structure. The sedimentation pond at the Waste Rock Storage Facility is sized for total containment of two consecutive 100-year, 24-hour storm events. Because of this extra storage capacity, there is no primary spillway or other mechanism for draining the pond; evaporation is expected to keep

water from accumulating and overflowing. There is a grouted riprap emergency spillway that is designed for a 100-year, 24-hour event, with an energy dissipater at the end.

Siltation Structures: Other Treatment Facilities

There are no “other treatment facilities” at the Deer Creek Mine. The sedimentation pond discharge at the mine has a UPDES permit. The pond at the Waste Rock Storage Facility is designed for total containment and has no UPDES permit.

Siltation Structures: Exemptions

There are no exempt areas at the Deer Creek Mine. Runoff from all disturbed areas is treated by some type of sediment control measure.

Discharge Structures

The pond in Deer Creek Canyon is designed for total containment of a 10-year, 24-hour event. Drainage of the pond is controlled with a manual slide-gate valve. A grouted riprap spillway provides controlled release for a 100-year, 24-hour event.

The sedimentation pond at the Waste Rock Storage Facility is sized for total containment of two consecutive 100-year, 24-hour storm events. There is no primary spillway; however, there is an emergency spillway, which is armored with grouted riprap.

Impoundments

Sediment control at the main Deer Creek Mine yard in Deer Creek and Elk Canyons and at the Deer Creek Waste Rock Storage Facility includes sedimentation ponds. The sedimentation ponds are inspected quarterly by a qualified registered professional engineer or land surveyor. A certified report is provided to the Division.

The sedimentation pond at the Waste Rock Storage Facility is designed for total containment of two consecutive 100-year, 24-hour precipitation events. There is no primary spillway, but there is a grouted riprap emergency spillway that is designed for a 100-year, 24-hour event, with an energy dissipater at the end.

The pond in Deer Creek Canyon is designed for total containment of a 10-year, 24-hour event. After 24-hours retention, the water can be drained through a manual slide-gate valve. A grouted riprap spillway provides controlled release of runoff from a 100-year, 24-hour event.

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Ponds, Impoundments, Banks, Dams, and Embankments

Neither sedimentation pond is an MSHA pond (30 CFR Sec. 77.216(a)). Both sedimentation ponds are temporary. Both are a combination of incised and embankment structures. They have been designed in compliance with the requirements of Siltation Structures.

Findings:

The plan contains commitments for application of the best technology currently available (BTCA) to prevent additional contributions of suspended solids to stream flows outside of the permit area.

RECOMMENDATIONS:

Complete the Midterm Review with no further recommended action.